in it as 100 V. the
Elm. F. of 70 Clark Cells
at 18°C. comes out
100.16 V. while by
Calculation from
1.434 at 15° it is
100.15 V.
The Ampere Balance is very
satisfactory.
Hoping to see you again
before long
Yours very Sincl
P Cardew

DSI

29th July 93

Dear Prof. Carhart

I am much
interested in your
Expts on Calomel Cell
The weak point seems
to be the absolute means
for hermetic sealing

But how would it do to
keep the cell always
immersed in oil?
I regret that I shall
not be able to attend
the Congress after all
We are very busy on
the Electric Traction
question.

So far as Ohm Ampere
& Volt go I suppose there
is no chance of disagreement.
We find our Ohm
agrees with Siemens
to 1 part in 100000
or to the limit of human
accuracy on this side
of the water
We have a Siemens standard 10Ω
ohms &. takes 1 amp.
& taking the fall of pots

BOARD OF TRADE. S. W.

9th June 93

My dear Prof. Carhart

I fear I must decline your flattering request that I should read a Paper at the forthcoming Electrical Congress, for the very

DSI

good reason, among others,
that I shall very
probably not be there,
and the progress of
telephony has not been
sufficient to enable
me conveniently to
address your collective
wisdom from this
office!
You will be glad to
hear that our Standard
Ampere keeps in
good health, and we
have setup a Companion
in the form of a Standard
100 Volts, which however
is not as yet quite
steadied & indulges
in youthful vagaries
Yours Very Sincerely
Gardeen

No.

Inland Revenue, Canada,

**Chief Electrician's Office,**

Ottawa, Jan 11th 1895

My dear Prof Carhart.

Many thanks for your kind favour of 9th instant in reference to the proceedings of the Int. Elec. Congress.

I was not aware that Dr. Mendenhall had resigned his position at Washington.

In Canada the units have been legalized by Act of the Federal Parliament a copy of which I send you under separate cover; also copy of the Electric

Light Inspection Act," the inauguration of which I am now engaged in.

You will observe in the Unite Act that the word "international" has been omitted, the Minister of Inland Revenue thinking it altogether unnecessary. As you will see, however, it is the International units that have been legalized.

Very sincerely yours,

O. H. Jarvis

Physikalisch-Technische
Reichsanstalt.
Abtheilung II.

Charlottenburg, den 5ten Juni 1893
Berlinerstr. 151.

Lieber Herr Professor Carhart!

Für Ihre im Namen des Committee on Programme an mich gerichtete freundliche Einladung, eine Abhandlung für den im August in Chicago abzuhaltenden Elektriker-Congress zu schreiben, bitte ich diesem Committee meinen besten Dank zu übermitteln.
Ich erkläre mich gern bereit dieser Aufforderung Folge zu leisten und auf Ihren Wunsch eine Abhandlung
"On Materials for Standards of Electrical Resistance and their Construction"
zu schreiben und Ende Juli an Prof. Mendenhall zu übersenden.
Würde es auch in dem Falle nöthig sein, die Arbeit

DSI

vorher einzuschicken, wenn ich im Auftrage der Reichs-
anstalt, wie ich zu hoffen Anlass habe, nach Chicago
gesandt würde?

Ich hätte dann die angenehme Gelegenheit mit Ihnen auch
in diesem Jahre wieder zusammen zu treffen.

Mit vielen freundlichen Grüssen

Ihr sehr ergebener

Dr. H. Linde.

10 HOPE STREET
EDINBURGH

August 21. 1893

Dear Professor Larhart

I am sorry I cannot find any of the penny guides to the Bridge. They seem to be hawked about by boys and not sold in shops. Send you meanwhile a description based on a set of photographs issued by one of the Engineers which may be of some use to you. Yours

somewhere a special a very
detailed description in a
number of "Industries". but
I cannot lay my hands
on it: It is sure to
turn up however & I shall
have great pleasure in
sending it when I can lay
my hands on it.

Wishing you a pleasant
voyage and safe return

regards in which my Wife joins

Believe me
Yours very sincerely
Richard Arkwright

Der Ausschuss
für die
Deutsche Elektrotechnik
auf der
Chicagoer Ausstellung.

Chicago, 3048 Lake Park Ave.

~~Chicago, Jackson Park.~~
~~ELECTRICITY BUILDING.~~

den May 30th 1893.

Prof. H. S. Carhart, Esqr.

Michigan University.

Dear Sir:

Be kind enough to send me as soon as possible items about the Electrical Congress to be held in the month of August in this city.

The „Verband der Elektrotechniker Deutschlands" asked me as their member to give them an exact programm of the Congress and what is intended to be discussed of general interest.

I learn from your letter to Mr. Hartmann, that you wanted five delegates from Germany. Please let me have official communication about the whole matter in order to enable me

DSI

to report home to the „Verband der Elektro-
techniker Deutschlands" officialy.

By an early answer you would oblige me

Very respectfully
Yours

Dr. Walter Labouk
Member of the Imperial German
Commission, in charge of de-
partment of Electricity.

# THE RECORD-HERALD'S CURRENT TOPICS CLUB.

[COPYRIGHT, 1901, BY VICTOR F. LAWSON.]

*Papers by Experts and Specialists. Seven Courses of Study.*

## PRESENT OPPORTUNITIES FOR YOUNG MEN.

### II.—A PROFESSIONAL CAREER IN APPLIED SCIENCE.

(By Henry S. Cahart, professor of physics, University of Michigan.)

One of the striking features of modern industrial activity is the increasing use of the exact sciences in those industries that are based on scientific discoveries. When one stops to consider the industries employing the known results of science the only cause for wonder is that the commanders in the commercial world have been so slow to accept pure science as a most important aid. It is conceded by those competent to judge that one of the prime causes contributing to the modern industrial development of the German Empire is the close alliance existing in that country between science and the industrial arts. Germany is rapidly moving toward industrial supremacy in Europe and one of the most potent factors in this notable advance is the perfected alliance existing between science and industry. Science has come to be regarded there as a commercial factor and it is in open and avowed alliance with commerce and industry. In Germany the financial promoters of great manufacturing enterprises avail themselves of the technical skill of men holding a university degree, and they use such support for the purpose of cheapening production, of perfecting the details of manufacturing, for the greater refinement of their products and for the discovery of new and improved methods and results.

In England more conservative methods prevail, improvements are slower, and new methods and processes are less noteworthy. In the newer industries especially American manufacturers are showing laudable enterprise in the utilization of the latest scientific discoveries. For further advances we must look to the more perfect adaptation of known physical laws to the production of useful results. If success in the arts of industry depends upon good management, wise economics, and high-class executive ability, it depends also in no small measure upon the employment of scientific methods of precision.

**Applications of Electricity.**

The industrial applications of electricity are luminous examples of the benefit to be derived from the application of the results of pure science to public utilities. For many years the telegraph was the only application of electricity to useful purposes on a commercial scale. Now the telephone, electric lighting, and the transmission of power have almost completely eclipsed the wonders of telegraphy. These later uses of electricity have followed in the wake of scientific discoveries, at first slowly, but later with most astonishing rapidity. The first incandescent lamps that ever came to Chicago, so far as the writer knows, came to him in Evanston as a gift from Mr. Edison just twenty years ago. During the same year he saw one of the earliest examples of the electric railway as a part of the exhibit of the firm of Siemens & Halske at the exposition of electricity in Paris. The progress made since then in both directions is largely due to the discoveries and inventions of men who have had a scientific training.

For many years we were content to buy cheap natural cement for all work of construction where the expensive German cement was not a necessity. Pure marl and clay we had in great abundance, but we lacked the combination of capital and technical skill to manufacture cement. Now no better Portland cement is made anywhere in the world than in Michigan and Pennsylvania.

**Applying a Scientific Education.**

[illegible] splendid op-

"wireless telegraphy." And these are only samples of what physical science wins from nature and adds to knowledge. Discovery blazes the way, and tireless invention presses forward to possess the land. The genius for great discovery is a rare one. A whole century rarely contains a dozen names worthy to be inscribed on the imperishable tablets of men's minds. Discoveries are not accidents; they are the outcroppings of divine inspiration. Discoverers are born, not educated. Whether the discoverer be exalted above the inventor or not, he certainly precedes him. He discloses the abstract principle, fact or law; the inventor embodies it in concrete form for service.

**Great Inventions by Trained Minds.**

Discoveries and inventions of the greatest utility do not spring from the brain of the ignorant. There is scarcely an invention of world-wide interest to humanity that has not seen its birth within walls devoted to education. Since the time when undue respect for the learning of the past ceased to dominate the present, institutions of learning have become the sources of the most significant advances in ideas. Just at the opening of the last century Volta, in an Italian university, presented to the world the voltaic cell, and Davy, in the Royal Institution in London, produced the first electric light. A little later Oersted, in the University of Copenhagen, uncovered the relation between magnetism and the electric current, and so became the pioneer in electro-magnetism. Then came Faraday, in the Royal Institution, with his mighty insight and his revelation of electro-magnetic induction. Henry and Morse, both of them American educators, made the electric telegraph before the middle of the century, and Helmholtz, in Germany, exposed to view the law of conservation of energy which now dominates all science, pure and applied. Then Lord Kelvin, in Glasgow University, taught masters of finance and promoters of international commerce how to use submarine cables, and invented the instruments for them. Bunsen and Kirchhoff discovered the laws of spectroscopy, and set astronomers to investigate the composition of the stars; Hoffmann, in the Berlin Chemical Laboratory, evolved new colors out of coal tar and revolutionized the industry of dyeing; Hertz discovered electric waves for future Marconis to utilize; Farraris, in Turin, invented the rotating magnetic field for induction motors; Roentgen applied photography to a new and marvelous art, the value of which is not yet fully appreciated; and, lastly, Pupin, in Columbia University, combined higher mathematics and physical intuition in the discovery of the method of overcoming the disastrous effects of induction in telephony. All of these discoveries and inventions have come out of institutions of learning.

**In an Age of Invention.**

It is a trite saying that the present is an age of invention. But the very triteness of the expression only emphasizes the truth of it. Invention touches every field of human activity. It not only modifies existing industries, so as to change their character in a decade, but it gives rise to entirely new ones. The invention of the telephone and of the incandescent electric lamp created two distinct industries, which have spread over the world in a quarter of a century, and are capitalized at several hundreds of millions of dollars. Minor modifications in existing practice in these two fields are of frequent occurrence, and a few years suffice to convert a modern outfit into an antiquated system. Other industries are affected to almost the same degree by improvements in progress. As soon as American manufacturers become convinced that their machinery and methods have been outclassed by those of newer design or by inventions they promptly discard the old and install the new. We are thus kept in the forefront of successful [illegible]roduc-

base on balls—Off McGinnity, 2; off Plank, 3. Struck out—By Plank, 3. Passed balls—Leahy, 2. Wild pitch—Plank. Time—1:53. Umpires—Mannassau and Connolly.

### Rusie Versus John. T. Brush.

MUNCIE, Ind., June 27.—Amos Rusie refused point blank to go to New York from Cincinnati to-day and assist the Cincinnati team in the game to-morrow, taking a vacation without pay till July 4 instead. The big pitcher says he was not to work until that date, and his trials in the former games were unfair. He came home mad to-night.

### Wilmot Goes to Grand Rapids.

GRAND RAPIDS, Mich., June 27.—Manager Walter Wilmot of the Louisville Western Association baseball team to-day made arrangements for transferring his club to Grand Rapids for the remainder of the season. The team will play its first game here next Wednesday.

### Notes of the Baseball Amateurs.

To-morrow afternoon will mark the opening games of the Royal Arcanum Baseball League. The teams in the fraternal organization have a number of the well-known amateurs and semi-professionals in their line-ups, and it is evident that the struggle for the championship is going to be bitterly contested. Considerable enthusiasm is developing among the different councils of the order. The following schedule of games will be played by the teams:

JUNE 29 AND AUG. 10.

Englewood Council versus Northwestern Council.
Progressive Council versus Garden City Council.
Arcanum Council versus Pere Marquette Council.

JULY 7 AND AUG. 17.

Progressive Council versus Pere Marquette Council.
Arcanum Council versus Northwestern Council.
Englewood Council versus Garden City Council.

JULY 13 AND AUG. 24.

Garden City Council versus Arcanum Council.
Progressive Council versus Englewood Council.
Pere Marquette Council versus Northwestern Council.

JULY 27 AND AUG. 31.

Progressive Council versus Northwestern Council.
Garden City Council versus Pere Marquette Council.
Englewood Council versus Arcanum Council.

AUG. 3 AND SEPT. 5.

Englewood Council versus Pere Marquette Council.
Northwestern Council versus Garden City Council.
Progressive Council versus Arcanum Council.

The Malt-Sinews are open for Sunday and July 4 and would like to negotiate with an out-of-town club for those dates. Address H. B. Leverenz, 327 North Hoyne avenue.

The Elk baseball team is scheduled to play the Medora Red Stockings to-morrow afternoon at Garfield Park. N. Brydges will do the twirling for the Elks.

Danny Boland, who has been absent for a year from the city, has returned. He will be a member of the Murrays on their trip through Indiana, Ohio and Kentucky next week.

The Kells have reorganized with the following new players: Northup, catcher; Olis, pitcher; O'Neil, first base; McDonald, second base; Sweeney, shortstop; Hayes, third base; Capener, left field; Mangan, right field; Sullivan, center field.

"Lefty" O'Day, a catcher from the Defiance, Ohio, semi-professional team, has signed with the Chicago Maroons.

The Standard baseball team would like to arrange a game for July 4 at its grounds, Forty-first street and Washington boulevard. Address R. T. Green, 2128 West Adams street.

The R. M. Donlins, one of the strongest 16-year-old teams in the city, desire to arrange a game for Sunday. Address C. Hartz, 739 Austin avenue.

Manager Conley of the Centrals requests the following players to be at the Union depot to-morrow at 9:30 o'clock: Conley, McDonald, Coshen, Hayes, Sullivan, Stewart, Capener, Northup, Heck and Mangan.

The Park Manors have not booked a game for July 4 up to date, and would accept an engagement with an out-of-town team for that day. Address E. S. Welch, 6720 Rhodes avenue.

Botsford and Moore will officiate as the battery for West Pullman Sunday against the Brebacks at West Pullman. West Pullman is open for engagements with an out-of-town team. Address Charles Hoffman, 12015 Union avenue.

In a closely contested game at Rochester, Ind., yesterday the local team defeated the Chicago Unions by the score of 7 to 6.

There will be a special meeting of the board of directors of the Amateur Baseball Managers' League Monday night at the Palmer House at 7:30 o'clock sharp. Some important business is to be transacted and it is essential that every member should be on hand.

## DISMISS JOCKEY WINKFIELD.

### May & Son Dissatisfied With Rides Made by Colored Boy.

Jockey Winkfield will ride no more for W. H. May & Son. The colored boy has made some weird rides recently not only for his employers, but on outside mounts as well. His effort on Pentecost Wednesday was the limit so far as May & Son was concerned. The firm decided yesterday morning to banish Winkfield from their stable and the contract for the services of the jockey was transferred to Pat Dunne. Winkfield's riding during the Harlem meeting last fall was not entirely above reproach.

### Attempted Killing Fails at Newport.

CINCINNATI, June 27.—Miss Logan was played for a killing in the last race at Newport to-day, but her leg bandages became unfastened and interfered [illegible] such an [illegible]

# QUAKERS TAKE TWO GAMES

## ORPHANS THROW AWAY SECOND

## Heavy Cannonading of Eason Decides First Contest—Errors, With Victory Within Grasp, Turn Scale in the Last.

**National League Games To-day.**

Chicago at Philadelphia.
St. Louis at Boston.
Pittsburg at Brooklyn.
Cincinnati at New York.

| | Played. | Won. | Lost. | Per ct. |
|---|---|---|---|---|
| Pittsburg | 53 | 30 | 23 | .566 |
| Brooklyn | 53 | 29 | 24 | .547 |
| New York | 46 | 25 | 21 | .543 |
| St. Louis | 54 | 29 | 25 | .537 |
| Philadelphia | 54 | 29 | 25 | .537 |
| Boston | 48 | 25 | 23 | .521 |
| Cincinnati | 51 | 22 | 29 | .431 |
| Chicago | 57 | 19 | 38 | .333 |

[SPECIAL TO THE RECORD-HERALD.]

PHILADELPHIA, June 27.—Two games more opposite to each other have seldom fallen to the lot of the average baseball enthusiast than the double-header this afternoon between the Phillies and Chicago, both of which were won by the quakers, the first without much of an effort, but the second a heartbreaking contest that kept the 4,285 persons guessing until the last man was retired.

The first game was one distinguished for hard and consecutive hitting, the second for good pitching and sharp fielding. The quakers' bats landed the first contest and better all-around fielding won the second. Considering the patched-up team the orphans presented, a pitcher being in left and catchers on first and second, they put up a pretty stiff game.

### Eason Gets a Drubbing.

For one brief inning Chicago had a chance in the first game, but after that the quakers simply ran away from them because of their heavy hitting. In only one inning did Eason escape a cannonading and the Chicago outfielders were kept chasing the ball until they were well-nigh worn out.

For seven innings the second game was one of the finest witnessed here for a long time, but in the eighth, as though wishing to end the agony, the Phillies apparently tried to give it to Chicago. Kling was the batsman up, and sent out a long fly to left, which Delahanty badly missed, giving the visiting catcher three bases. Taylor sent him home with a business hit to center, only to be forced at second by Hartsel's grounder to Cross. Green fouled out, but Dexter hit safely to right. Flick thought he could head Hartsel off at third, and his throw was so vigorous that it went over Wolverton's head, Hartsel scoring. Wolverton saw Dexter legging it for the plate and endeavored to head him off, but also threw wild, and Dexter registered the third run—all practically gifts.

### Threw Away Second Contest.

Overwhelmed with appreciation, Chicago in its half returned the compliment with interest. Cross and Duggleby, the first two men up, struck out. Thomas hit an easy grounder to McCormick, who in his haste threw badly to first, the ball rolling under the visitors' bench, and before Chance could dig it out Thomas was safe at third. Hallman cracked out a double to left center, scoring Thomas, and Delahanty sent Hallman over the plate with a great drive over Menefee's head. Flick's single allowed Delahanty to score the tying run, and pandemonium reigned.

Flick started to steal second, and kept on to third on Kling's bad throw and everything was up to Wolverton. A groan went up as he batted an easy [illegible]

with a scientific education. He is no longer limited to the one profession of teaching for a livelihood, but has open to him the fairest fields in the creative industries. It is his function to show how to transmute raw materials into valuable finished products. He stands today as the technical adviser of great corporations. In fact, he is already at the head of important industries, either as president of a great railway, manager of a famous mine or superintendent of a noted manufacturing establishment. A few years ago the strongest electrical corporations were averse to the employment of young men with a technical training. Now they want no others for their technical and engineering work. The last few years have shown almost a revolution in American sentiment relative to the practical advantages of expert scientific service. It is no exaggeration to claim that our recent expansion of national industrial aspiration to world-wide limits is in no small measure due to the more thorough utilization of scientific methods and scientific training than formerly. Lord George Hamilton has recently declared that the competition England has to face in the iron industries is founded on something more formidable and more substantial than quick wit in securing contracts and an easy conscience in filling them. He says: "Chemical research, the consolidation of capital, thorough technical education and improved industrial organization have made in recent years a greater advance in America than here. It is with the product of these combinations and not with the assumed stupidity of the officials that the British engineer has to contend."

There is an open door, then, leading to success and to useful service for those who are competent to avail themselves of the opportunity.

### Physics in the World's Work.

The relation of physics to this problem is an intimate one. Physics is fundamental to all the physical sciences. Physical and chemical principles are so interwoven that any distinction drawn between these two branches of science is likely to be founded on an arbitrary and artificial definition and hypothesis. Modern chemistry is becoming physical in character, as is shown by the large place occupied in recent chemical literature by the investigations in physical chemistry.

The great subdivisions of physics, having the largest application to practical problems, are mechanics, heat and electricity. All the fundamental problems in mechanics and the application of mechanical principles to machinery are physical in character. Mathematics is impressed as an instrument for service in physical investigation. The scientific man has little interest in higher mathematics for its own sake, but chiefly for its use in solving the problems presented by science. It is invaluable as a servant, but a hard taskmaster. What is known as applied mathematics is mathematics turned to useful purposes in scientific work, or to express the scientific relations of dependent facts.

One does not need to dilate on the importance of the study of heat. It is sufficient to draw attention to the problems involved in heating and ventilation and to gas and steam engines. No data are at hand relative to the aggregate steam power used in different countries, but a single item is impressive. The North German Lloyd Steamship Company alone has in its fleet a steam equipment amounting to more than 300,000 horse power. Any discovery, invention or improvement that will increase the efficiency in the conversion of the potential energy of fuel into mechanical energy will be a boon to the industrial life of the world, and will prolong the period over which the supply of coal will extend. The advances in this field of research do not occupy so large a share of public attention as those in some other departments, but they are none the less of considerable magnitude and of the utmost importance.

### Recent Marvelous Discoveries.

The past twenty-five years have witnessed a vast development of the subject of electricity as a department of pure physics. The novelties in the application of electricity to practical uses are not the only ones in this branch of science, but entirely new facts and possibilities are emerging into view with every revolving year. Physical investigation furnishes the foundation and the stimulus for the inventor. He is no sooner at the end of his resources for fundamental principles to utilize than the discovery of some unexpected and marvelous phenomenon opens new possibilities and fires him with new zeal. Witness the discovery of X-rays by Roentgen and of electro-magnetic waves by Hertz, the latter opening the way for tion, and inventors find a ready market for their worthy inventions.

Inventions are of several grades. There are the inventions that benefit no one except the patent office and the patent solicitor. These compose the most numerous class. The cause of their failure is various. Many of them do not accomplish the object set forth in their preamble; they are either defective in design or they propose to accomplish what is physically impossible. Much time is spent on designs that one familiar with physical laws sees to be futile. Others may accomplish the nominal object of the invention, but the result are without practical value.

Another class of inventions originate with persons engaged in special industries. These illustrate the familiar adage that necessity is the mother of invention. The specialist must first have the wit to perceive the want, and then the inventive talent to meet it. Such inventions usually relate to details. They are useful, but not revolutionary.

### Discoveries That Open New Fields.

There is another class of inventions standing entirely by themselves, inventions that open new fields, give rise to new industries, and revolutionize existing arts. The telephone was such an invention; so also was the cotton gin, the sewing machine, the steam engine, the dynamo electric machine and the incandescent electric lamp. There are others in the chemical industries of perhaps equal importance. Inventions of this character are of the highest order of merit. Their authors are classed with explorers, discoverers and the benefactors of mankind. They always give rise to a large crop of others in imitation of them, or relating to detail improvements. But they are not all of equal merit, and no inventor, property equipped with the necessary culture and training, need despair of producing them.

Thorough preparation is essential for the profession of an inventor, and since physics furnishes the fundamental principles to be applied in the great majority of inventions this subject must be thoroughly mastered. It should be pursued first as a branch of pure science, with extended laboratory practice. The manner in which physical phenomena are illustrated and the fundamental principles are applied in physical measurements furnishes a splendid training for the subsequent application of these same principles in the useful industrial arts. Later physics should be studied in connection with its applications, and the most satisfactory method at present to obtain such a combined course is in schools of technology or engineering. A combined mechanical and electrical course with the stress laid on mathematics and physics offers the best opportunity for fitting a young man for the profession of an inventor.

### The Training of a Specialist.

A modern technical training is a training of the hand as well as of the brain. There is an obscure but none the less real connection between manual and mental training which deserves more general recognition than it has hitherto received. It is cognate with "practical experience," which denotes in a skilled man certain information not otherwise obtainable, and a valuable kind of mental training as well. It is not fully recognized that the graduate of a technical school, who has learned to do things with his hands as the instruments of a cultivated brain, acquires the practical details of the specialist with much greater rapidity than the man without the education.

The commendable practice of requiring a student in the laboratory to set up and adjust his own apparatus has a most beneficial effect in the acquisition of confidence. He is thus taught to depend on himself and to acquire the capability of securing results. The ideal technical training is one in which fundamental principles are thoroughly taught and experimentally illustrated in the best manner. It does not profess to prepare a young man for the work of an artisan, but for the higher office of a creator in the inventive, constructive and industrial arts. It teaches him not to be a mere imitator, but a producer. It shows him how human powers in correlation with nature and the materials she offers can bring about new results and change the face of nature herself.

Henry S. Carhart

Hay-Fever Sufferers
Find prevention, instant relief, CURE in "ORANGEINE" powders. FULL, simple directions in package.—[Adv.

The new Pullman Car Line to Pan-American Exposition is via the Picturesque Erie every day in the year. Special low rates. Erie Ticket Office, 242 South Clark Street and hotel offices.—[Adv.

with her to s... extent that she could not get up a gallop. The race was won by Santa Ventura at 30 to 1. J. J. Douglass of Louisville was at Newport to-day to confer with Secretary Fowler of the Turf Congress in regard to opening up the Douglass Park track at Louisville. The track will probably be opened in the fall, backed by Louisville capital. Summaries:

First race, six and one-half furlongs—Golden C., 3 to 1, first; Prudent, 5 to 1, second; Fusion, 12 to 1, third—time, 1:21½.

Second race, six furlongs—Nellie Helmuth, even, first; Larry C., 4 to 1, second; Bean, 5 to 1, third—time, 1:14¾.

Third race, five furlongs—Rose of Red, 8 to 5, first; Follow, 6 to 5, second; Corinne C., 5 to 2, third—time, 1:02.

Fourth race, mile and an eighth—Birdier May, 3 to 1, first; Banquo II., 4 to 5, second; Slasher, 5 to 1, third—time, 1:54.

Fifth race, seven furlongs—Eleven Bells, 8 to 1, first; Stamp, 4 to 1, second; Nelse Morris, 6 to 1, third—time, 1:28¼.

Sixth race, six furlongs—Santa Ventura, 30 to 1, first; Locust Blossom, 10 to 1, second; Charlie Daniels, 5 to 1, third—time, 1:14¾.

### Race Results at Highland Park.

DETROIT, June 27.—Weather fine at Highland Park; track fast. The summaries:

First race, six furlongs—Satire, Lady Hayman, Ida Penzance—time, 1:14¾.

Second race, five furlongs—Similar, St. Hera. Miss Blarney—time, 1:02.

Third race, six and one-half furlongs—Bonnie Maid, Medford, Sauceboat—time, 1:23.

Fourth race, seven furlongs—Gray Daily, Gotemba, Lizzie A.—time, 1:29.

Fifth race, one and one-sixteenth miles—Woodtrice, Obstinate Simon, Dolly Wagner—time, 1:49.

Sixth race, six and one-half furlongs—Hie Away, Filibuster, By George—time, 1:21¾.

### Decide Vance Nicol's Case.

HARTFORD, Conn., June 27.—The board of review of the National Trotting Association here today, in the case of the association against Vance Nicols of Cleveland, driver of the horse Arch W., owned by Henry Eck, took up the allegation that the horse after making a record of 2:16½ in Birmingham, Ala., in 1899, was entered out of his class in a race in Cleveland. P. P. Johnston, Lexington, Ky.; George W. Archer, Rochester; Morgan P. Bulkely, Hartford; N. C. Blake, Cedar Rapids, Iowa, and Frank Bowen, Philadelphia, were the members of the board present. The owners of the horse were ordered suspended until the money won in the illegal races should be returned, and F. B. Gilbert, who drove him, was ordered expelled.

### Skull Cracked; Holds Horses.

DETROIT, June 27.—On a writ of attachment issued by the Circuit Court to-day five horses now in the stables at the Highland Park race track were seized by a deputy sheriff. The horses are owned by W. F. Pressgrave of Philadelphia and the attachment was issued to insure the attendance of the owner in a suit for personal injuries brought by Darius M. Slocum of this city, who was knocked from his bicycle by one of the horses, which became frightened at a street car while they were being led along Woodward avenue to the Highland Park stables on June 8. Mr. Slocum sustained a fractured skull and other injuries, for which he asked $10,000 damages.

# MISS MOORE IN THE FINALS.

### Defeats Miss Atkinson in Women's National Tennis Tournament.

[SPECIAL TO THE RECORD-HERALD.]

PHILADELPHIA, June 27.—The various events in the women's national lawn tennis tournament were advanced to the final stages at Wissahickon Heights to-day. The most important match of the day was that between Miss Bessie Moore and Miss Juliette Atkinson in the semi-final round of the women's singles, which the former won in straight sets, 6—2, 9—7. Miss Marion Jones easily defeated Miss Emma Farren, 6—1, 6—2.

In the consolation singles Miss G. F. Jones lost to Miss D. H. Rastall in straight sets, the match between Miss Rachel Harlan and Miss Jean B. Clarke being unfinished. In the preliminary round of women's doubles, Miss Marion Jones and Miss E. Moore beat Miss G. F. Jones and Miss Jean B. Clarke, 6—1, 6—2, and in the next round Misses Moore and Jones won from Miss Green and Miss Chichester, 6—2, 6—4. Miss Juliette Atkinson and Miss Myrtie McAteer also beat the Misses Rastall, 6—3, 6—0.

In the semi-final round in mixed doubles, Miss M. Jones and Mr. Little beat Mr. and Mrs. Fielding, 6—1, 6—1. Miss McAteer and Dr. Stevens beat Miss Rastall and Mr. Hoskins, 6—2, 6—1.

### St. Ignatius Boys Hold Field Day.

St. Ignatius College yesterday closed its commencement week exercises with the annual field day. The trophy cup offered by A. G. Spalding was won by John Moore of the senior class. In the junior division the highest number of points was scored by John P. Seger. Anthony Nolan led among the smaller boys of the college. The field day closed with the class relay race. The team of the senior class of 1901, composed of C. Mercer, T. Mercer, M. Bisdorf and C. Zarek, won a handsome banner. Time four minutes and thirty seconds.

### Walthour Lowers Records.

WASHINGTON, June 27.—At the Coliseum Park track to-night Bob Walthour defeated Arthur W. Ross in a twenty-five-mile motor-paced race in 38:33 2-5, beating the world's record made by Stinson of 39:24. Walthour's closing mile was made in 1:26 4-5, which, it is said, breaks the competition record for that distance.


### Excursion Tickets to New York.

Commencing July 1 the Lake Shore and Michigan Southern will sell reduced rate tickets to New York and return, permitting stop-over at the Pan-American Exposition. Inquire at city ticket office, 180 Clark-st., or address F. M. Byron, G. W. A., Chicago.—[Adv.


quickly changed to a joyous shout as Dexter fumbled the ball and Flick raced home with what proved the winning run.

Two hits in the first seven innings were the total of the quakers' batting, both by Flick. But for the erratic support given him Taylor would have shut the locals out. Score of first game:

| Chicago. | R. | H. | P. | A. | E. | Phila. | R. | H. | P. | A. | E. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hartsel, rf. | 1 | 1 | 2 | 0 | 0 | Thomas, cf. | 3 | 3 | 2 | 0 | 0 |
| Green, cf. | 0 | 1 | 0 | 0 | 0 | Hallman, 2b. | 2 | 2 | 4 | 0 | 0 |
| Dexter, 2b. | 0 | 1 | 5 | 1 | 0 | Delah'ty, lf. | 4 | 4 | 4 | 0 | 0 |
| Chance, 1b. | 1 | 0 | 7 | 0 | 1 | Flick, rf. | 2 | 4 | 1 | 0 | 0 |
| Menefee, lf. | 1 | 1 | 1 | 0 | 1 | Wolv'ton, 3b | 1 | 3 | 3 | 3 | 0 |
| Raymer, 3b. | 2 | 2 | 2 | 1 | 0 | Jennings, 1b | 1 | 2 | 10 | 1 | 0 |
| McC'm'k, ss. | 2 | 3 | 2 | 4 | 0 | Douglass, c. | 0 | 3 | 1 | 2 | 0 |
| Kling, c. | 0 | 2 | 5 | 3 | 0 | Cross, ss. | 2 | 0 | 1 | 3 | 2 |
| Eason, p. | 0 | 1 | 0 | 2 | 2 | Donohue, p. | 1 | 0 | 1 | 2 | 0 |
| Total | 7 | 12 | 24 | 11 | 4 | Total | 16 | 21 | 27 | 13 | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Chicago | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 3 | 0—7 |
| Philadelphia | 2 | 4 | 0 | 1 | 6 | 0 | 1 | 2 | *—16 |

Two-base hits—Delahanty, Flick (2), Wolverton, Jennings, Hartzell, Menefee. Three-base hit—Delahanty. Sacrifice hits—Hallman, Donohue. Stolen base—Kling. First base on balls—Off Eason, 4. Hit by pitcher—Jennings, Thomas. Struck out—By Eason, 4. Time—1:50. Umpire—Cunningham.

SECOND GAME.

| Chicago. | R. | H. | P. | A. | E. | Philadel. | R. | H. | P. | A. | E. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hartzel, rf. | 1 | 1 | 1 | 0 | 0 | Thomas, cf. | 1 | 0 | 2 | 0 | 0 |
| Green, cf. | 0 | 0 | 0 | 0 | 0 | Hallman, 2b. | 1 | 1 | 1 | 8 | 0 |
| Dexter, 2b. | 1 | 2 | 3 | 5 | 1 | Delahanty, lf | 1 | 1 | 0 | 0 | 0 |
| Chance, 1b. | 0 | 0 | 6 | 1 | 2 | Flick, rf. | 1 | 3 | 1 | 0 | 1 |
| Menefee, lf. | 0 | 1 | 5 | 0 | 0 | Wolverton, 3b | 0 | 0 | 1 | 1 | 1 |
| Raymer, 3b. | 0 | 3 | 1 | 1 | 0 | Jennings, 1b. | 0 | 0 | 12 | 1 | 0 |
| M'Cormick, ss | 0 | 1 | 1 | 2 | 1 | McFarland, c | 0 | 0 | 2 | 2 | 0 |
| Kling, c. | 1 | 1 | 6 | 0 | 1 | Cross, ss. | 0 | 0 | 7 | 4 | 0 |
| Taylor, p. | 0 | 1 | 1 | 1 | 0 | Duggleby, p. | 0 | 0 | 1 | 9 | 0 |
| Total | 3 | 10 | 24 | 10 | 5 | Total | 4 | 5 | 27 | 20 | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Chicago | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0—3 |
| Philadelphia | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | *—4 |

Earned runs—Chicago, 1. Two-base hits—McCormick, Flick, Hallman. Three-base hits—Kling, Delahanty. Sacrifice hits—Wolverton, McCormick. Stolen base—Flick. Left on bases—Chicago, 5; Philadelphia, 5. First base on balls—Off Duggleby, 2. Struck out—By Taylor, 4. Time—1:45. Umpire—Cunningham.

# CHAMPIONS IN SECOND PLACE.

### Brooklyns, by Defeating the Pirates, Go Up a Notch.

BROOKLYN, June 27.—The Brooklyns took second place in the pennant race by beating Pittsburg today. They took a long lead by batting Chesbro for eight runs in the first four innings, but the visitors played a great up-hill game and made the finish close. McJames tired in the sixth and gave way to Kitson, who did good work. Catches by Clark, McCreery and Keeler were features. Score:

| Pittsburg. | R. | H. | P. | A. | E. | Brooklyn. | R. | H. | P. | A. | E. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Clark, lf. | 1 | 1 | 4 | 0 | 1 | Kelley, 1b. | 0 | 1 | 7 | 0 | 0 |
| Beaumont, cf | 0 | 0 | 1 | 0 | 0 | Keeler, rf. | 2 | 1 | 2 | 0 | 0 |
| Leach, 3b. | 2 | 2 | 2 | 3 | 0 | Sheckard, lf. | 1 | 2 | 1 | 0 | 0 |
| Bransfield, 1b. | 1 | 2 | 11 | 1 | 1 | Daly, 2b. | 2 | 2 | 5 | 2 | 0 |
| Wagner, rf. | 0 | 1 | 0 | 0 | 0 | Dahlen, ss. | 1 | 1 | 4 | 2 | 2 |
| Ritchey, 2b. | 1 | 0 | 3 | 4 | 1 | McCreery, cf | 2 | 2 | 4 | 0 | 0 |
| Ely, ss. | 2 | 1 | 1 | 4 | 1 | Gatins, 3b. | 0 | 2 | 0 | 1 | 0 |
| Zimmer, c. | 0 | 2 | 1 | 0 | 0 | McGuire, c. | 0 | 1 | 4 | 4 | 0 |
| Chesbro, p. | 0 | 1 | 1 | 0 | 0 | McJames, p. | 0 | 0 | 0 | 1 | 0 |
| | | | | | | Kitson, p. | 0 | 0 | 0 | 0 | 0 |
| Total | 7 | 10 | 24 | 12 | 4 | Total | 8 | 12 | 27 | 10 | 2 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pittsburg | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 0—7 |
| Brooklyn | 4 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | * | —8 |

Two-base hits—Zimmer, Dahlen, McGuire, McCreery. Three-base hits—Zimmer, Keeler. Home run—Sheckard. Stolen bases—Clark, Leach. First base on balls—By McJames, 2; by Kitson, 2. Struck out—By McJames, 4; by Kitson, 1; by Chesbro, 1. Wild pitch—McJames. Time—1:55. Umpire—O'Day. Attendance—2,600.

### Giants and Reds Break Even.

NEW YORK, June 27.—The New Yorks and Cincinnatis broke even to-day. The westerners won the first game by good batting. In the second game they were beaten because of inability to hit Taylor's pitching. Score of the first game:

| New York. | R. | H. | P. | A. | E. | Cincinnati. | R. | H. | P. | A. | E. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V. Haltren, cf. | 0 | 3 | 1 | 1 | 0 | Dobbs, cf. | 0 | 2 | 1 | 0 | 0 |
| Selbach, lf. | 0 | 0 | 0 | 1 | 0 | Harley, lf. | 1 | 1 | 0 | 0 | 0 |
| Nelson, 2b. | 0 | 0 | 1 | 4 | 0 | Beckley, 1b. | 1 | 2 | 7 | 0 | 0 |
| Hickman, ss. | 0 | 0 | 2 | 4 | 1 | Crawford, rf. | 3 | 5 | 1 | 0 | 1 |
| Ganzel, 1b. | 1 | 1 | 16 | 0 | 0 | Magoon, ss. | 0 | 1 | 1 | 5 | 1 |
| Strang, rf. | 1 | 1 | 0 | 0 | 0 | Steinfeldt, 2b | 1 | 3 | 6 | 3 | 0 |
| Warner, c. | 0 | 2 | 4 | 2 | 0 | Irwin, 3b. | 0 | 0 | 2 | 1 | 1 |
| Davis, 3b. | 1 | 2 | 3 | 3 | 0 | Peitz, c. | 1 | 1 | 9 | 2 | 0 |
| Doheny, p. | 2 | 2 | 0 | 4 | 0 | Hahn, p. | 0 | 1 | 0 | 0 | 0 |
| *Bowerman | 0 | 0 | 0 | 0 | 0 | | | | | | |
| Total | 5 | 11 | 27 | 19 | 1 | Total | 7 | 16 | 27 | 11 | 3 |

*Bowerman batted for Doheny in the ninth.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| New York | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | —5 |
| Cincinnati | 0 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 1 | —7 |

Two-base hits—Van Haltren, Warner, Dobbs, Magoon, Peitz. Three-base hits—Doheny, Crawford. Home run—Crawford. Stolen bases—Van Haltren, Davis. First base on balls—Off Doheny, 1; off Hahn, 2. Struck out—By Doheny, 2; by Hahn, 8. Hit by pitched ball—By Doheny, 1. Double plays—Irwin to Steinfeldt to Beckley; Magoon to Steinfeldt to Beckley. Passed balls—Warner (2), Peitz. Wild pitch—Doheny. Umpire—Dwyer. Time—2:00. Attendance—4,200.

Second game:

| N. York. | R. | H. | P. | A. | E. | Cin'nati. | R. | H. | P. | A. | E. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| V. Halt'n, cf. | 0 | 1 | 1 | 0 | 1 | Dobbs, cf. | 0 | 0 | 2 | 0 | 0 |
| Selbach, lf. | 1 | 1 | 2 | 1 | 0 | Harley, lf. | 0 | 0 | 1 | 0 | 0 |
| Nelson, 2b. | 2 | 1 | 1 | 2 | 0 | Beckley, 1b. | 0 | 1 | 11 | 2 | 0 |
| Hickman, ss. | 0 | 1 | 1 | 4 | 0 | Crawford, rf. | 0 | 0 | 2 | 0 | 0 |
| Ganzel, 1b. | 0 | 0 | 11 | 0 | 0 | Magoon, ss. | 0 | 1 | 0 | 2 | 1 |
| Strang, rf. | 0 | 0 | 0 | 0 | 0 | Steinf, dt, 2b. | 0 | 0 | 4 | 3 | 1 |
| Warner, c. | 1 | 2 | 10 | 1 | 0 | Irwin, 3b. | 0 | 0 | 0 | 1 | 1 |
| Davis, 3b. | 0 | 2 | 1 | 3 | 0 | Bergen, c. | 0 | 1 | 3 | 1 | 0 |
| Taylor, p. | 0 | 1 | 0 | 1 | 0 | Phillips, p. | 0 | 0 | 1 | 6 | 0 |
| Total | 4 | 9 | 27 | 12 | 1 | Total | 0 | 3 | 24 | 15 | 3 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| New York | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | * | —4 |
| Cincinnati | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | —0 |

Two-base hits—Hickman, Beckley, Magoon. Sacrifice hit—Taylor. Stolen base—Davis. Base on balls—Off Taylor, 4; off Phillips, 2. Struck out—By

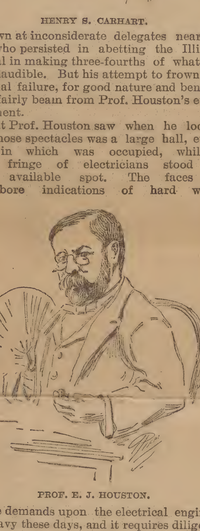
# SEEK FOREIGN LORE.

## POINTS FOR AMERICAN ELECTRICIANS ON LONG DISTANCE WORK.

**Entire Session of the Congress Given Up to the Discussion of This Subject—Experts Agree That Such Transmission of Power Is Coming and That the Simple Alternating Currents Are Most Feasible—Large Attendance at the Psychical Congress—Specialists Exchange Ideas.**

*Today's Program*—9 a. m., Hall 27, Congress on Geology (woman's session); 10 a. m., Hall 3, Psychical Science; Hall 4, Chemistry; Hall 22, Pharmacy; Hall 7, Electricity (general session); Hall 26, Philosophy; Hall 29, Geology; Halls 31, 32, and 33, Meteorology; 11 a. m., Hall 24, Astronomy; Hall 25, Mathematics; 2 p. m., Hall 3, Pharmacy; Halls 31, 32, and 33, Meteorology; 8 p. m., Hall 3, Psychical Science; Hall 26, Philosophy.

With a fan in one hand and a gavel in the other Chairman E. J. Houston peered over his iron-rimmed spectacles at the big meeting of the Electrical Congress yesterday. Occasionally he slipped a sly smile out under those same spectacles to familiar faces; anon he pounded on the table with his gavel and tried



HENRY S. CARHART.

to frown at inconsiderate delegates near the door who persisted in abetting the Illinois Central in making three-fourths of what was said inaudible. But his attempt to frown was a dismal failure, for good nature and benevolence fairly beam from Prof. Houston's every lineament.

What Prof. Houston saw when he looked over those spectacles was a large hall, every seat in which was occupied, while a thick fringe of electricians stood in every available spot. The faces of all bore indications of hard work,

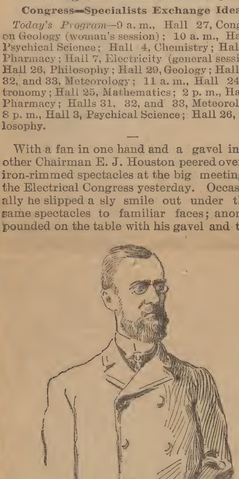
PROF. E. J. HOUSTON.

for the demands upon the electrical engineer are heavy these days, and it requires diligence and plenty of it to keep abreast of the developments in this marvelous science.

Everybody was eager to hear, for one of the most important problems to confront the electrical engineer, that of long distance transmission of power, was up for discussion. The entire time of the session was given over to this one subject. At the end of the three hours' session it was clearly evident that no one man knows all about electricity and that they are very far from agreeing perfectly in their views. To borrow phrases electricians love to roll under their tongues, an alternating current of speakers flowed across the platform exhibiting multiphase views on the subject.

**Seeking Foreigners' Secrets.**

The story goes, and it may or may not be true, that the engineers in congress assembled had concocted a deep plot to entrap some of the eminent engineers from abroad into giving up their knowledge on the subject of long distance power transmission. It was talked around among the gossipy delegates who haunted the corridors after the meeting that this dark plot originated in Johns Hopkins University. Dr. Lewis Duncan of Baltimore was selected to manipulate the decoy, so these gossipy delegates said, which was to draw the fire of the big guns of the convention and expose their stores of learning to the depredations of the smaller fry. Dr. Duncan did his part well. He dangled his decoy before the eyes of such men as Stillwell of the Westinghouse Electric Company, George Forbes, F. R. S., the Englishman, who is electrical engineer for the company that is putting in the plant for the transmission of power from Niagara to Buffalo; Silvanus P. Thompson, who is acknowledged to stand at the head of all



PROF. ANDREW JAMIESON.

writers on electrical subjects, and others of lesser prominence, until they were impelled to a reply.

Some of the lesser lights were artfully sandwiched in to cast doubts on the possibility or practicability of long distance transmission, to goad the victims of the pumping process on. The five minute rule was made elastic at the outset so as not to allow the men who played the part of matadors in this forensic bull fight to weary the auditors and yet give the bulls abundant opportunity to give up all the information they would. If the engineers did not find out all they wanted to they did learn much. Divested of the phalanxes of polysyllables unknown to Webster, which made the discussion absolutely unintelligible to the non-technical, it may be said that the consensus of opinion among the leaders was that long distance transmission of power was coming and that the polyphase system was not in it; that the single phase must be relied on in the future.

**Multiphase System Must Go.**

Silvanus P. Thompson said on this point: "For distribution purposes we will have to abandon all the complications of the multiphase system and return to the simple alternating current."

As nearly everybody was interested in the discussion in Section C there were not many left to attend Section A, where Dr. H. T. Eudy, President of Terre Haute Polytechnic Institute, presided in place of Prof. Rowland. Theoretical papers were presented by Dr. J. Sahulka, A. Blondel, and Prof. W. E. Ayrton, F. R. S.

The audience ranged in front of Prof. Cross' desk in Section B was a variable quantity. Dr. Frederick Bedell, Prof. H. S. Carhart, A. E. Kennelly, and Prof. J. A. Ewing, F. R. S., read papers. Then came a short recess. When the section reassembled Prof. Andrew Jamieson of Glasgow took the platform to read a paper on "London Electrical Engineering Laboratories." Prof. Jamieson is Professor of Electrical Engineering in the Glasgow and West of Scotland Technical College. He has had vast experience in electrical engineering in important positions. He also has an accent so broad he has to turn it up on edge to get it through an ordinary doorway. Prof. Jamieson enjoys the distinction of possessing the most picturesque hirsute adornment in the whole congress.

Address O F 130, Tribune office.

SITUATION WANTED—AS BOOKKEEPER OR assistant by a man who has had considerable experience, with best of references; will work for a moderate salary. Address KENRICK BOWDEN, Park Ridge, Ill., or 55 Portland Block, Chicago.

SITUATION WANTED—BY COMPETENT BOOKkeeper and accountant to take charge of office of manufacturing Co. or wholesale house; no objection to going out of city; 15 years' experience; first-class references. Address O F 96, Tribune office.

SITUATION WANTED—I DESIRE A POSITION of general office man; good correspondent and collector; can furnish first-class references and cash security if well secured. Address O 19, Tribune office.

SITUATION WANTED—BY YOUNG MAN; EXperienced bookkeeper and officeman; understands stenography and typewriting; best city references; small salary to start. Address M 45, Tribune office.

SITUATION WANTED — BY YOUNG MAN AS bookkeeper, city collector, or any kind of office work; 5 years' experience in office; can furnish good references. Address O F 143, Tribune office.

SITUATION WANTED — BOOKKEEPER AND cashier of 10 years' experience desires a position; rapid, accurate, good penman; married; excellent references and bond. Address O F 125, Tribune.

SITUATION WANTED—BY YOUNG MAN OF 28; SALESMEN—GOOD SIDE LINE; LIBERAL COMmission; state territory traveled and who with ORDWAY & CO., Peoria, Ill.

SALESMEN—ACQUAINTED WITH HARDWARE trade, in Michigan, Iowa, Minnesota, Missouri; must have reference. Address O F 150, Tribune.

SALESMEN—TO SELL PETIT LEDGERS, ADvertising cards, and many other specialties to merchants. W. B. PERSHING, South Bend, Ind.

SOLICITOR—SUCCESSFUL — OF CUSTOMERS for first-class rooms in private dwellings; give references and salary. Address M 146, Tribune.

SOLICITOR—ADVERTISING; FIRST-CLASS; ON good medium. 1218 Masonic Temple.

SOLICITOR—GOOD HUSTLER ON SALARY. 1538 75th-st. FRANK HUDSON.

TRAVELING SALESMAN (SIX) — $50 PER month salary; to sell side line; staple; no samples; name territory covered. MASON MFG. CO., Chicago.

## Trades.

BUTCHER—A GOOD RELIABLE AND EXPERIenced meat cutter; those speaking English, German, and Bohemian preferred.
290 Milwaukee-av.

CARPENTERS—PAINTERS, AND LABORERS. Apply at office, 41 Wabash-av.

COOK AND STEWARD—WANTED TO ACT AS COOK and steward on a steam yacht; must be thoroughly competent; references required. Call 47 Board of Trade 9 a. m.

TURNER—(WOOD); WHO CAN RUN BAND SAW. SIEBER & MEISSNER, 64 River-st., Elgin, Ill.

## Coachmen. Teamsters, Etc.

COACHMAN—SECOND MAN, SINGLE, EXPERIenced with horses and fine harness. Apply at stable, rear 182 Rush-st.

## Miscellaneous.

ATTENDANT—FOR HOTEL NEWS STAND WHO dispenses cold drinks; no soda water; give references. Address M 145, Tribune office.

DRUGGIST—BY DOCTOR, FOR HIS DRUGstore, to put in few hundreds and services for half interest. Address Y W 39, Tribune office.

GENTLEMAN — SINGLE, ENGLISH PREferred; commanding few hundred, to join another; commission business; take charge while advertiser travels. Address P 72, Tribune office.

HOTEL RUNNER—EXPERIENCED; TO MEET trains. Call 87 S. Water-st. MR. BENN.

MAN—ACTIVE YOUNG MAN WHO WILL APpreciate steady position; pays $1,000; increase according to ability; must leave city; furnish $100 cash for samples. 230 5th-av., 7th floor.

MANAGER—FOR RESTAURANT; GOOD OPPORtunity for A1 man. Apply 100 State-st.

MEN—A NUMBER OF INTELLIGENT, POLITE, and able-bodied young men to push chairs at World's Fair 30th; must be of good stature and furnish satisfactory recommendations. Apply to Columbia R. C. Co., Jackson Park.
Signed Columbia R. C. Co., J. R. ADAMS, Mgr.

PRINCIPAL, LARGEST, MOST RELIABLE, AND best established employment exchange in Chicago. People's Exchange Co., Suite 925 Unity Bldg.

POSITIONS SECURED COMPETENT MEN. CAMPBELL, DOWD & CO., 11, 325 Dearborn-st.

RUNNER—HOTEL; EXPERIENCED; SALARY and commission; must be first-class. Hotel Bancroft, Calumet-av. and 23d-st

WANTED—MAN WITH 5 YEARS' EXPERIENCE to take charge of small hotel and restaurant; must have good references from responsible parties; will pay $40 per month and board. Address O F 155, Tribune office.

WANTED—GOOD MEN TO TAKE ORDERS FOR the Book of the Fair, by Hubert Howe Bancroft; over 2,000 beautiful pictures; in 25 parts, at $1 per part; prospectus now ready. The Bancroft Co., 30, 31, and 32 Auditorium Building.

YOUNG MAN—BRIGHT—TO COLLECT; $7 PER week and commission; must have $250 cash deposit. Address M 158, Tribune office.

# WANTED—FEMALE HELP.

## Domestics.

CHAMBERMAID—EXPERIENCE IN HOTEL. 400 S. State-st.

CHAMBERMAID—ALEXANDRA HOTEL, COR. Cottage Grove and Bowen-av.

COOK—COMPETENT—AND LAUNDRESS—FOR small family in Evanston. Apply to MRS. EBLING, 659 La Salle-av., city.

COOK AND SECOND GIRL—AT 503 DEARBORN-av.; maids come to town to see the Fair need not apply; references.

COOK—FIRST-CLASS, IN COUNTRY; WAGES $6. Reference. Address M 149, Tribune office.

COOK—3003 DREXEL-BLVD.—GOOD GIRL FOR cook; German or Swede.

COOK — WOMAN, AT 346 DEARBORN-ST., Monon Restaurant; good wages.

GIRL—TO ASSIST WITH LIGHT HOUSEWORK and baby. 15 Wisconsin-st. Flat 4.

HOUSEWORK—IN OAK PARK, AN EXPERIenced, trustworthy girl for general housework; good references required. Apply Friday, Aug. 25, between 2 and 4, Room 102, 161 La Salle-st., Chicago.

HOUSEWORK—EXPERIENCED GIRL FOR GENeral housework; must be a good sixth cook and laundress; references required. Apply at 5620 Monroe-av.

HOUSEWORK—GIRL FOR GENERAL HOUSEwork; good cook; with references. 507 Webster-av.

HOUSEWORK—A FIRST-CLASS GIRL FOR general housework; Danish or German preferred; good home; good pay. 4416 Langley-av.

HOUSEWORK—GENERAL GIRL — PRIVATE family. 456 Irving-av.; take Ogden-av. car to Taylor-st.

HOUSEWORK—GIRL FOR GENERAL HOUSEwork; must give good reference. 3401 Calumet-av.

HOUSEWORK—GERMAN GIRL FOR GENERAL housework in American family of two. 298 East Erie-st., second floor.

HOUSEWORK—GIRL FOR GENERAL HOUSEwork. 3600 Lexington-av.

HOUSEWORK—GIRL FOR GENERAL HOUSEwork. 236 E. 45th-st.

HOUSEWORK—A GERMAN OR SCANDINAVIAN woman. 1001 W. Adams-st.

HOUSEWORK—GOOD GIRL OR WOMAN FOR general housework at once. 5156 Michigan-av.

HOUSEWORK—FIRST-CLASS GIRL FOR GENeral housework. 237 Clifton-av.

HOUSEWORK—GENERAL—GIRL—SMALL FAMily; must be good cook. 242 46th-st., near Drexel.

SECOND GIRL AND NURSE FOR CHILDREN 3 and 5. 5114 Madison-av.

WOMAN—FIRST-CLASS HOUSEWOMAN; COLored. At 2979 Prairie-av.

## Seamstresses and Dressmakers.

DRESSMAKER—BY DAY. MUST BE GOOD FAMily sewer. Call at once 3532 State-st.

## Housekeepers.

HOUSEKEEPER — WORKING HOUSEKEEPER for widower and four children; a good comfortable home to the right party; must be an American and an intelligent person; wages $5.50 per week; middle-aged person preferred. O 22, Tribune.

HOUSEKEEPER—GOOD CHANCE FOR A1 woman experienced in hotel. 400 State-st.

## Stenographers.

STENOGRAPHER AND TYPEWRITER—LADY, IN a large mercantile office; applications should state experience, references, and salary expected. Address O F 152, Tribune office.

STENOGRAPHER—COMPETENT. ADDRESS O F 133, Tribune office.

TYPEWRITER—RAPID; ONE WITH MACHINE preferred. Address M 140, Tribune office.

## Miscellaneous.

LADY—OF INTELLIGENCE AND REFINEMENT. 1605 Monadnock Block.

SALESWOMEN—THREE, FOR THE FAIR; MUST be good looking, and experienced in selling goods. Address, with picture, which will be returned, Universal Winding Co., Shoe and Leather Building, Section G, Column 17, World's Columbian Exposition.

SALESLADIES—2—TO TAKE ORDERS; SOMEthing new; $3 to $5 per day. C. A. WILCOX, 297 Wabash-av.

WOMAN—TO COOK AND WASH FOR SIX PERsons. 4816 Grand-blvd.

# AGENTS WANTED.

AGENTS—$5 DAILY; ANTI-BURN COOKING mat. NELSON LITTLE, Manufacturer, 218 Clark-st.

MEN—TO OPERATE MY CISTERN AND WELL strainer; cleans and cleanses without removing the water; perfect success; $5 to $15 per day made; small capital required; investigate. W. VAN VELZEN, 66 W. Lake-st., 4th floor.

MALE AND FEMALE AGENTS WANTED, SALary or commission; absolutely new specialty; lightning seller. PATTERSON-FOWLER CO., 220 Dearborn-st.

PORTRAIT AGENTS WANTED — STRAIGHT work; high commission. The Climax Art Co., 187 W. Madison-st.

SALARY OR COMMISSION TO AGENTS TO Chan'lle the Patent Chemical Ink Erasing Pencil. The most useful and novel invention of the age. Erases ink thoroughly in two seconds. Works like magic. 200 to 500 per cent profit. Agents make $50 per week. We also want a general agent to take charge of territory and appoint subagents. A rare chance to make money. Write for terms and specimen of erasing. Monroe Eraser Mfg. Co., X 14 La Crosse, Wis.

WANTED—
Special and district agents to represent the Fidelity Mutual Life of Philadelphia; insurance at actual cost, 10, 15, and 20-year term policies, renewable without examination; A, 15, and 20-payment optional, limited policies; life policies at life rates; pays the full face of policy in cash at the end of probation life or 20 years; pays the pouicies if returned by man and wife; $60000,000 in force; assets 41 times its liabilities; $2,253,000 written in Cook County 1892; over $1,120,000 written since Jan. 1, 1893, over $300,000 written in July; don't waste your time trying to sell high premium policies, money is too scarce; but if you can furnish ref. come and see what I have to offer; we challenge comparison with any Company doing business in the U. S. I also want a district manager for every county in Illinois; give experience and references.
F. B. FLEMING, Western Manager,
45, 46, 47, 48, 115 Dearborn-st.

WANTED—3 GOOD MEN, GOOD WAGES, AT your homes. 217 West Madison-st., second flat, Room 9.

# ACCOUNTANTS.

BOOKS OPENED, BALANCED, ETC., BY EXpert accountant; best references. Address O F 106, Tribune office.

BOOKS OPENED, CLOSED, AUDITED BY EXpert accountant. Best references. O F 94, Tribune.

C. NIGG, EXPERT ACCOUNTANT, R. 9 TRIBune Bldg.; phone 5515 main.

# EMPLOYMENT BUREAUS.

ANY BUSINESS HOUSE SUPPLIED GRATIS with stenographers of any grade; some are good penmen or bookkeepers; some own machines.
E. S. HANNA, 115 First National Bank Building.

# EDISON'S ELECTRIC LIGHT.

## An Expert Electrician Examines the New Illuminator and its Modus Operandi, and Pronounces it Successful.

Prof. Carhart of the Northwestern university recently visited New York city, and he writes as follows to the Chicago Journal:

"Through the courtesy of Mr. F. W. Jones, general circuit manager of the Western Union telegraph company and president of the New York Electrical society, your correspondent was favored last evening with admission to Mr. Edison's private office at the headquarters of the Edison Electric Light company, on Fifth avenue. The purposes of this company are sufficiently well known. It has now a local habitation in an elegant Fifth avenue mansion, brilliantly illuminated every evening as an announcement of Edison's apparent success in domestic lighting by electricity.

"As we were about sending up our cards Mr. Edison entered the vestibule, and conducted us directly to his office. The room was dark when we entered, but a quarter-turn of a hard rubber key almost instantly filled it with mid-day brightness. There was no adjustment of the key, no flickering of a gas flame, no disagreeable and deleterious products of combustion, but the steady glow of a lamp of sixteen-candle power. This particular lamp depended from a carved brass tube attached to the top of a large double cylinder desk. Over the pear-shaped bulb was suspended a white glass shade which reflected the light down upon the accumulated business papers on the desk. In the upper hall an uncovered lamp was attached to an ordinary gas bracket, while a chandelier of four electric lights surmounted the newel post in the main hall below.

"Mr. Edison received us cordially, made no reference to gas illumination, but discussed the 'ultro-gaseous state of matter,' which was my topic for experimentation in Cooper Union the following evening, and then kindly cleared up several points in the construction and practical working of his lamps, about which I had been in doubt. These lamps are now exhausted to about a millionth of an atmosphere, so that the consumption of the carbon conductor by combustion may be entirely disregarded. These latest lamps are constructed of a carbonized fibre of bamboo. A piece six inches long, cut between joints, is pared up into thin slices; then the slices are further cut into very narrow strips, no thicker than a fine knitting-needle, and these have their ends prepared to enter suitable clamps for connection through the glass bulbs with the electric circuit. About 1,500 of the bamboo fibres are bent around a form in the shape of a slender letter U, are inclosed in a practically air-tight mold and carbonized in a very hot furnace. The factory at Menlo park has now a capacity of 1,500 lamps per day. Each lamp has a resistance of 124 ohms for sixteen-candle power, and its "life" or duration is about 300 hours. Any device that will lengthen the "life" of this carbon fibre will, of course, make the system more economical. But that it is merely a question of economy, affecting the practicability of the lamp in no other way, is evident from the fact that a used-up lamp can be replaced much more quickly and safely than a broken lamp-chimney. Three or four turns of the glass bulb remove it, and as many more in the opposite direction, of course, replace it again. This, Edison demonstrated to us by extinguishing a lamp and immediately removing it. It was replaced in from three to five seconds, and the turning of the key was alone necessary to relight it in as great perfection as before. There was no hot glass to handle, no plumber was required, no connections were to be made gas-tight, and no match dropped its charred end to soil the carpet. The plan is to have a boy deliver daily these glass bulbs wherever they are needed, a small supply being kept on hand at every house, so that whenever a lamp fails it can be replaced at any moment.

"The tariff for each consumer will depend only on the electricity used, and not upon the number of lamps that may be required. Hence it will be an inducement to the company to make the lamps as durable as possible. This removes the most serious objection to Edison's system that presents itself to an outsider. If, with this commercial drawback, the system can still be financially successful as compared with illumination by gas, then the incandescent electric light is the light of the future, at least for domestic purposes.

"Mr. Edison explained the giving way of the carbonized fibre in a way that was entirely new to me. Consumption by oxidation has nothing to do with it, but the carbon is volatilized and slowly transported across from the negative pole to the positive. Every lamp gives way at the negative pole; and no fibre fails at any imperfect point, where there is a nick made for instance, unless that point is near the negative pole. If it is at the positive, the fibre is in no way endangered by it it.

"The Edison lamp in its present form represents the product of a vast outlay of inventive energy as well as hard cash. Difficulty after difficulty has been met and overcome. Mr. Edison has called to his aid not only skilful mechanics, but expert electricians, calculators and financiers. He has now forty or fifty glass-blowers who have been taught in his own shop, every one of whom can make a lamp from beginning to end, so far as the work in glass is concerned. Every point, from the dynamo-machine up to the lamp, has been experimentally tested with the object of making a commercial success. The relation of parts, that is satisfactory with only a scientific experiment in view, is found not to hold when machines and engines and conductors are increased in size up to the requirements of a vast commercial undertaking. Hence the financial outlay and the months of delay before the present stage has been reached. Now that the board of aldermen have voted the privilege of laying conductors, notwithstanding the mayor's veto, the work of establishing machines at central stations and of laying conductors will be pushed forward with vigor. The conductors, consisting of copper rods of semi-circular section, with the flat sides turned toward each other, will be placed in gas pipes, and the whole intervening space between the conductors and the pipe will be filled with insulating material. Each lamp will be placed in an independent circuit running from one of the main copper rods across to the other. The system may be likened to a ladder, the sides of which correspond to the main conductors, connected at one end with the dynamo-machine, while the rounds answer to the cross circuits in which the lamps are placed. This is called connecting them in multiple arc; and since there are to be many lamps in the circuit of each dynamo-machine, and the incandescence of each carbon is due to its resistance to the passage of electricity, it is evident that the resistance of the carbon must be made high. The larger the number of lamps in each circuit in multiple arc, the larger must be the resistance of each lamp; for the larger the number of these cross-wires containing the lamps, the larger the number of paths for the electricity from one conductor over the other, and the smaller the total resistance of the circuit; and unless the resistance of each lamp is made high, the combined resistance of many lamps in *multiple arc* would be reduced to a quantity comparable with the resistance of the large conductors and the machines. In that case a considerable portion of the energy of the current would be lost in traversing the large conductors, as the heat produced in each part of a circuit, considered as a whole, varies according to its proportion of the resistance. Unless the current is employed to do mechanical work by means of electromagnets, it is all converted into heat in going round the circuit. The adjustment of resistances must, therefore, be such as to develop the largest possible proportion of the total heat-equivalent of the current just where it is wanted—that is, in the carbonized fibre of the lamps."

# RIMMING DE

# OHN G.

# FRIN

## OOM ENDS!

Having Purchased the season's loom
e of the largest manufacturers, we
ace them on sale at prices far below r
so closed a large importation of all

# Bead Fr

hich we will dispose of at FIFTY

# BLACK PASSE

e at present very scarce in the ma
lers for these goods, we are enabled
prices beyond competition. Our var
nteries, Fringes and Ornaments is co

## COLORED SILK

In most every Color and Shade, a

☞ The time being at hand for Sc
RIMMING for Dresses, an assortmer
ASSEMENTERIES and FRINGES and

## OHN G. MYERS, - -

### Wants.

ANTED—A girl to do up-stairs work and take care of two children. Apply at 81 vk street. 350

ANTED—A girl to cook, wash and iron; German preferred. Apply at 47 Westerlo between the hours of 6 and 9 P.M. 351.

### Board and Rooms.

LEASANT ROOMS WITH BOARD IN A house having all modern improvements; lo- on central. Apply at 31 Beaver st. 247

### Summer Resorts.

# AVE HOUSE,

## Howe's Cave, Schoharie Co., N. Y.

ne proprietor wishes to announce that an ex- sive addition has recently been made to this el, giving it accommodations for 250 guests. as broad, cool piazzas; rooms are large, airy, rly and elegantly furnished, and may be occu- l en suite or singly. Hot and cold water on floor, baths, gas, steam, electric annuncia- bowling, billiards, first class livery and laun- Telegraph and telephone stations at the e.

ews of Cave, Cave House and surroundings, ther with diagram of rooms, may be seen at wix Hall, Albany, on Wednesday, June 1st. 10 a. m. to 3 p. m., where rooms may be en- d.

**J. M. RUSSELL, Proprietor.**

# CLAFLIN HOUSE,

**BECKET, Mass.**

his popular Summer House, situated among famous Berkshire Hills, 65 miles from Albany, ow open. Being

**1,200 Feet Above the Sea,**

air is at all times cool and invigorating. City erence. For descriptive circular address

**A. G. CROSS, Proprietor.**

53

# ENRY L. SMITH.

# For $5.00

WE SELL

## MEN'S ALL-WOOL

# Cheviot Suits,

ELL MADE AND TRIMMED.

# or $8, $10, $12,

WE OFFER

## en's AND Youths' Stylish

# SUITS

all the most popular Shades and Mixtures.

# Boys' & Children's

# SUITS

## In Over 150 Varieties.

very taste can be suited, and no House can offer greater in- ducements to purchasers.

## GET OUR PRICES

BEFORE BUYING.

# SCIENTISTS TALK OF TESLA.

## Lord Kelvin Delivers a Flattering Eulogy of the Young Napoleon of Electricity.

CHICAGO TRIBUNE BUREAU,
Toronto, Ont., Aug. 24.

"When Tesla speaks the world listens," said a distinguished physicists this morning in the meeting of the mathematics and physical science section of the British association. The sole contribution of the young New York inventor to the meeting here was being discussed. Engaged in most animated talk over it were Lord Kelvin, Professor Elihu Thompson, Professor S. P. Thompson, Professor G. P. Fitzgerald, Professor Oliver Lodge, Professor H. S. Carhart, Professor G. F. Barker, Professor Webster, and a dozen other stars of the electrical firmament. It was a curious fact that none of them could satisfactorily explain the operation of the new invention which Tesla had sent for their inspection.

Tesla himself could not be present. Instead he sent his latest piece of electrical apparatus and a short paper descriptive of its construction and operation. After the description had been read the device was tried and worked to the astonishment and delight of the assembled wise men. But when the presiding officers called for remarks on the demonstration every man had a different theory, and the discussion which followed developed finally into a friendly conversation, in which all took part. Then when it was over it is doubtful if any of the scientists were satisfied as to the true principles involved in the device.

The invention shown was a new machine for making Roentgen rays of extreme penetrating power. It is designed to take the place of an ordinary induction coil for the purpose of exciting a Crookes tube, and was said by Professor Barker of Philadelphia, who had seen it work in Tesla's laboratory, to furnish such a strong excitant that with a fluoroscope he was enabled to look through Tesla himself with the greatest ease.

The device consisted of two large coils of wire mounted on a neat wooden base, which contained inside of it a new type of condenser made by Tesla himself. One of these coils acted as a magnet to make and break the current and at the same time helped to charge the condenser. This latter in turn threw its electric power into the second coil, which acted like an ordinary induction coil, but with extraordinary efficiency. According to the scientists present this scheme was an entirely new mode of using a condenser.

After the reading of the paper by Professor J. McClellan the room was darkened and the current turned on. With a current from an ordinary incandescent lamp sparks were produced six inches long. Then two fine wires tied to glass rods were stretched out parallel from the terminals. Immediately a band of glowing phosphorescent light was formed between the two, diversified with frequent brilliant sparks. It was a beautiful effect, well shown, and the assembled electricians were pleased with it, and played with the machine like boys with a new top. Then came the discussion.

Lord Kelvin opened the discussion by a flattering eulogy of Tesla, and by stating how pleased he had been with the demonstration. He said it was a most wonderful development of the induction coil and was destined to be of great importance.

An important medical discovery has come to light that is doing remarkable things in the way of curing the weakness that so many men find creeping upon them at a time when they ought to be elastic and full of vigor.

The young men who are prematurely old and dragged down by a weight of recollections of wasted thoughts and idle dreams can be brought to a condition of buoyancy and freshness that is truly remarkable.

Even the worn-out "rounders" or the older man still able to keep on his feet can be made young in body and spirit if not in years.

Jas. P. Johnston, a citizen of Ft. Wayne, Ind., has found a most remarkable remedy that restores strength where needed and revives the waning ambition with wonderful quickness.

It cures the condition that unfits a man for business or pleasure; that robs him of the sweets of life; takes away his energy and isolates him from the enjoyments and opportunities that constantly present themselves. Continued failure begets despondency, and all his undertakings seem to go wrong.

A request to Mr. Jas. P. Johnston, Box 1112, Ft. Wayne, Ind., stating that you would like a sample of his remedy for men, will be complied with promptly and no charge whatever will be asked by him. He is very much interested in spreading the news of [illegible] remedy, and he sends [illegible]

THE SCOTSMAN, THURSDAY, AUGUST 11, 1892.

Her Majesty's Board of Works.

Lord KELVIN said the meeting of the British Association, now so near its close, had been a particularly brilliant one. A very important piece of work had been got through by section A, with assistance from other sections, and that was an arrangement for the final adoption of a system of electric measurement which promised to become thoroughly international. (Applause.) Two Congresses were held in Paris in 1881 and 1884, and a great deal of work had been done in connection with the proposals of those Congresses, and in continuation of work partially finished when they were held. Things seemed coming to an issue for the very important practical object to which he had referred, and the British Board of Trade had appointed a committee with a view to a final settlement of what should become legal in this country in regard to electric measurement. That committee a year after had very nearly come to a conclusion when there was happily obtained assistance and co-operation from Germany and from France, through Professor Von Helmholtz and M. Guillaume respectively. They had affirmed in a satisfactory manner the proposed resolution of the Board of Trade in the main, and they had made exceedingly valuable suggestions for amendment, which had been adopted by the representative of the Board of Trade who was present on the occasion. If for nothing else than a settlement of this question, with a view of it becoming legal in this country, and putting it into a strongly favourable position for it being adopted as an international system by the Governments of Germany, France, America, and, he thought, he might almost say, therefore, of the rest of the world—(applause)—the meeting had been of very great importance. In this great work they had had assistance from America also, alike in the persons of Professors Carhart, of Boston, and Rowland, of Baltimore, although the latter had not been present with them. They had now a distinct system of measurement for practical purposes of the quantities of electricity used and the quantity of energy supplied for illumination and other objects, the whole worked out in a form which, under successive Acts for controlling the action of the Board of Trade in respect to the public distribution of electric light and power, would become the fundamental means of securing that right was done between the supplier and the customer in those great public affairs. (Applause.) But the brilliance of this meeting of the Association had been very remarkable in other respects besides that to which he had alluded. The papers communicated to the different sections and the discussions thereon had certainly made this meeting of greater scientific interest than almost any other he could remember. He begged to propose a vote of thanks to visitors from other countries for their communications to the sections—the Prince of Monaco, Professor Helmholtz, Dr Lindeck, Dr Kahle, Professor Carhart, Professor Atkinson, Dr Guillaume, Professor Ostwald, Professor E. Wiedeman, Professor Errera, Professor Goebel, Professor Elving, Baron Richthofen, Professor Fritsche, Dr Schoute, Professor Otto Pettersson, and Professor Renard. (Applause.)

THE SCOTSMAN, THURSDAY AUGUST 11 1892

Company, the plaintiff returned his fees as director, but whether before or after the appointment of a liquidator was not clear. The plaintiff, therefore, had had a large experience in the getting out of companies whose career was brief, and it was but reasonable to hold that he was a person likely to be on his guard against prospectuses, and not likely to be deceived by representations contained in them. He found that the plaintiff was not misled by the prospectus. He was so intent upon becoming a director that he was careless and indifferent to other matters. It might well be that an inexperienced widow would be moved by the expectation held forth that the dividends would be 100 per cent.—a common form of statement in prospectuses of this class—and induced to put in her mite of 5s., in the belief that you had only to walk about the property to pick up nuggets of gold; but to make any such supposition in the case of a person of such varied experience as the plaintiff possessed would be to cast a slur on his intelligence. It was plain that had he been appointed a director he would not have taken any trouble before taking his seat on the board. He was at an early stage put on inquiry, and he shut his eyes. Instead of coming to the Court promptly for relief against his contract, he waited until upwards of a year had elapsed. The plaintiff was unable to say at what time he first became aware of the alleged misrepresentations, or of the alleged existence of what he called the Gilbert gang. In any view of the case, and assuming that the prospectus did contain false statements, he came too late. The result was that the plaintiff's case failed, and his action must be dismissed. When, however, he came to consider the question of costs, he could not disregard the demerits of such a company as was this. The mining property which this company placed before the public formed part of a property in Venezuela which three other companies had been previously concerned with. The property was undeveloped, and had not advanced before the stage of prospecting for gold. The first of these companies was the Victoria Gold Company, incorporated in 1882, and wound up in 1885. The second was the Victory (Limited), incorporated in 1886, and wound up in 1887. The third was the Victory Gold Mining Company (Limited), incorporated in 1888, and recently reconstructed. The last of this series was the present company, the Aaron's Reef, which was registered on the 15th of January 1890, with a capital of £200,000 divided into 800,000 shares of 5s. each. The plaintiff was a shareholder of the third company. The Gilbert gang, as it was called, was concerned with all the four companies. S. P. Gilbert and Robert Larchin were two members of this set of persons. Having registered the Aaron Reef on the 15th of January, Gilbert and his associaties proceeded to register on the 24th of the same month an auction company, which they called the City Stock Exchange Company (Limited.) This company was wound up in the month of November 1890. It was obviously brought into existence merely for the purpose of the two contracts mentined in the Aaron's Reef prospectus, and dated the 13th and 14th January 1890. The audacity of the pro-

For .....

THE

General Press Cutting Association, Ltd.

17, Cockspur Street, London, S.W.

Telegraphic Address,
Prescut, London.

*Cutting*

*Address of*

*Issue dated* ....



**Calibrating Large-Current Ammeters.** — Prof. H. S. Carhart, of the Michigan University, sends to the *Electrical World* the following note on a method of obtaining large alternating currents for calibrating ammeters and electro-dynamometers. The particular advantage of the method lies in the fact that it requires only a small amount of power and no lamp load, non-inductive resistance, etc. It assumes that one has available a standard instrument for the measurement of alternating currents, such as a Kelvin balance of the requisite capacity. A source of low E.M.F. and small output is all that is necessary, in addition to an ordinary transformer. The author uses a small alternator capable of giving a voltage up to 135 volts. Connect this directly to the primary of the transformer whose secondary must have a current capacity equal to the maximum current of the instrument to be calibrated. Then connect in series the standard instrument and the one to be calibrated so as to short-circuit the secondary of the transformers through them, using short, stout wires for making the connections. It will now be possible to obtain any current up to the maximum by adjusting the voltage of the small generator by varying its field excitation, beginning with low values. Since the only resistance in the secondary circuit is that of the instruments and of the secondary itself, the power absorbed is very small. This method was suggested by a similar procedure in the measurement of the magnetic leakage or cross flux in a transformer, which consists in observing the primary voltage required to give the full load current in the short-circuited secondary. It works admirably, and only low voltages are employed. When no small generator giving a lamp voltage direct is available, the secondary potential difference of another transformer may be applied to the primary of the transformer employed for calibrating purposes, with an adjustable resistance in series between the two step-down transformers.

THE ELECT

appointments at the same time.

**Tramways in Great Britain.**—It appears from a parliamentary return issued on Friday by the Board o Trade that the total capital expended on tramways in the United Kingdom till June 30 last was £14,782,700, a compared with £4,207,350 in 1878. The total length o line open was 1,031 miles; the number of horses employed was 37,342; the number of locomotive engines belonging to tramway companies was 492—a smaller number than in the three preceding years; while the total number o passengers carried was 788,000,000, being the highes on record. The net profits were £1,037,149. Of the 1,031 miles of tramways open, 367 belonged to loca authorities.

DSI

**Electric Riveting.**—The opening meeting of the thirty ninth session of the Institution of Naval Architects wa held last week in the hall of the Society of Arts, John street, Adelphi. The president, the Earl of Hopetoun was in the chair. A paper by Herr F. Von Kodolitsch describing a new electrical riveter devised by himself, was in the absence of the author, read by the secretary. The paper stated that for the last two years the author had been experimenting on electric riveting machines and had finally succeeded in bringing out a type of machine quite capable of superseding the two systems already existing—viz., hydraulic and pneumatic riveting. There was no difference in the quality of the work done, but the quantity

THE ELECT

street,

was in the [illegible] by Herr F. Von Kodolitsch describing a new electrical riveter devised by himself, was in the absence of the author, read by the secretary. The paper stated that for the last two years the author had been experimenting on electric riveting machines and had finally succeeded in bringing out a type of machine quite capable of superseding the two systems already existing—viz., hydraulic and pneumatic riveting. There was no difference in the quality of the work done, but the quantity

20, Carlton House Terrace,

London, S.W.,

England.

19 FEB 1915

Dear Sir,

I am well aware that American enterprise has made available reprints of the official papers relating to the present European war; but the original British prints of these publications may not be accessible to those persons of influence who would study them for a true history of the conflict. I am venturing to send to you under another cover several of these official documents. I am sure you will not consider this an impertinence, but will realise that Britishers are deeply anxious that their cause may be judged from authoritative evidence.

In common with the great majority of Americans, you have, no doubt, made up your mind as to what country should be held responsible for this tragedy, but these

DSI

papers may be found useful for reference, and because they contain the uncontrovertible facts, I feel that you will probably welcome them in this form.

My long and intimate association with the United States through my writings gives me confidence to approach you, and I trust you will not think me intrusive or misunderstand my motive.

With all respect,

I am,

Yours very truly,

Gilbert Parker